

AU/ACSC/2015

AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

A NUCLEAR IRAN: DID THE UNITED STATES, UNITED NATIONS AND
EUROPEAN UNION'S USE OF SANCTIONS IMPACT THE IRANIAN NUCLEAR
PROGRAM?

by

Woodrow M Bell, Major, USAF

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

Advisor: Dr. Fred Stone

Maxwell Air Force Base, Alabama

October 2015

Disclaimer

The views expressed in this academic research paper are those of the author(s) and do not reflect the official policy or position of the US government or the Department of Defense. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.

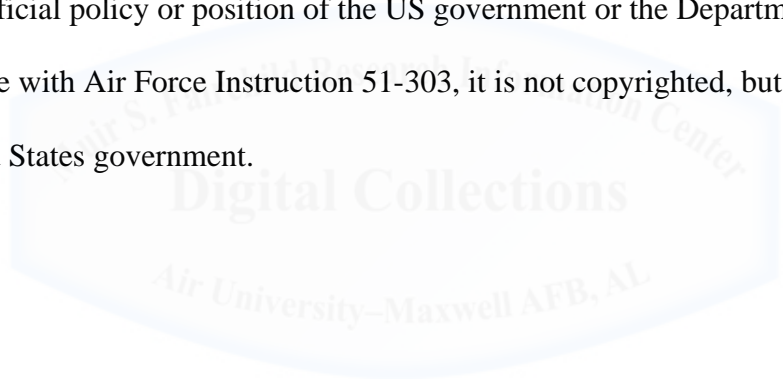


Table of Contents

Table of Contents	iii
List of Figures	iv
ACKNOWLEDGMENTS	v
ABSTRACT	vi
INTRODUCTION	1
Research Question	2
Research Methodology	2
BACKGROUND	3
History of The Iranian nuclear program post-9/11 to 2015	3
RESEARCH CRITERIA	11
United States/EU/UN strategy	11
Evaluation of Impact on Iranian nuclear program using United States/EU/UN Sanctions Criteria	14
Financial restrictions	19
ANALYSIS OF RESULTS	23
Problem areas found with Sanctions	25
RECOMENDATIONS	26
CONCLUSION	29
NOTES	30
BIBLIOGRAPHY	38

List of Figures

Figure 1. Iran’s Exports to Select Countries (2007).....	16
Figure 2. Amount of installed & operational centrifuges by year.....	18
Figure 3. Iranian Crude oil Exports (January 2011-October 2013).....	21
Figure 4. Iranian GDP Annual Growth Rate (2010-2015).....	22



ACKNOWLEDGMENTS

I would like to first thank Dr. Brett Morris who skillfully guided me in writing my research proposal. His feedback and support resulted in a solid foundation for this paper. I would also like to thank Dr. Fred Stone, who provided outstanding suggestions and feedback that allowed me to focus this paper to the topic at hand. This paper would not exist without the help of both these gentlemen.

I would also like to thank Paul Pladson, Major James Moran and Captain Cory Leckrone, who had to endure hours of me bouncing research ideas off of them and who gave me outstanding feedback on specific areas of my paper that I forced them to read.

Most importantly, I thank my family. To my Mother, who always encouraged me to chase my dreams and to my Father who taught me to continually ask why, I would not be where I am today without your love and support. To my daughters; who helped keep the pets controlled, the house clean, the Mom assisted and the noise to a minimum, thank you. Finally, to my wife; who supported my desire to continue my education, took care of the children and pets while I was studying, and who learned more about this topic than she ever wanted to through reading my paper and listening to my endless ideas. None of this would have been possible without the love and support from my wife and daughters. You inspire me.

ABSTRACT

In 2015 the Islamic Republic of Iran signed the Joint Comprehensive Plan of Action and agreed to limit their nuclear program in exchange for the lifting of sanctions by the international community. This agreement occurred fourteen years after the events of September 11, 2001. During this timeframe numerous sanctions were imposed by the United States, United Nations and European Union with the intent of impacting Iran's nuclear ambitions. The purpose of this research was to evaluate if these sanctions did impact Iran's nuclear program through analyzing what sanctions were implemented, how they were implemented, when they were implemented and what they targeted. The impacts of the sanctions were compared against the desired outcomes established by the United States, United Nations and European Union in their sanctions policies. Finally, this paper concludes with recommendations on how to improve future sanctions programs.

INTRODUCTION

The terror attacks of 11 September 2001 (9/11) forced the United States to re-interpret its policies on international terrorism. Specifically, the United States believed that the Islamic Republic of Iran was possibly attempting to use its civilian nuclear program to pursue nuclear weapon ambitions that could have benefited terrorist organizations.¹ After the United States invasion of Iraq, President George W. Bush declared Iran to be a member of the “Axis-of-Evil” because of its alleged support to terror groups and its efforts to pursue weapons of mass destruction², setting the stage for years of continued confrontations between the two nations.

In order to hinder Iran’s nuclear ambitions the United States (US) employed a wide variety of sanctions, deterrence and disarmament efforts using the diplomatic, military and economic instruments of power. These actions ranged from applying strict limitations against financial vehicles, petrochemical production and real property sanctions against key members of the Iranian government involved in its nuclear program.³ In 2005, the European Union (EU) and the United Nations (UN) joined these deterrence efforts as they imposed multiple levels of sanctions against Iran.

In 2013 the United States and the five permanent members of the United Nations Security Council (France, Great Britain, China and Russia) plus Germany (P5+1), came to an interim agreement with Iran regarding its nuclear program which was then finalized and signed in 2015 as the Joint Comprehensive Plan of Action (JPA). In exchange for the UN, United States and EU lifting sanctions, Iran agreed to hard limits on its uranium

enrichment capacity and capabilities, a redesign of its heavy water reactor in Arak to disable plutonium creation and unhindered monitoring of multiple Iranian nuclear sites by the Atomic Energy Agency (IAEA).⁴ With this plan in place it is necessary to determine what role US actions, policies and sanctions played in Iran's agreement to the nuclear limits put forth by US, UN and EU.

Research Question

Specifically, have US nuclear weapons reduction strategies, post 9/11, impacted Iranian nuclear capabilities? This paper evaluates the impact of sanctions on Iran's decision making process, nuclear program, and economy.

Research Methodology

To best answer the question, this paper will utilize an evaluative framework. This framework is most effective for evaluating if the US-led sanctions met its desired ends based on the criteria defined by the United States government, specifically, ensuring that Iran fulfills its duties as a signatory to the 1968 nuclear non-proliferation treaty (NPT) and that Iran does not obtain a nuclear weapon.

It will also analyze the status of Iran's economy prior to the implementation of sanctions and where it stands now. It will also determine if any effects in these areas had impacts on Iran's nuclear ambitions through analyzing financial and commercial restrictions against the government and how they affected the internal Iranian markets. Finally, this paper will describe the history of the United States deterrence efforts post 9/11, then look at how these policies were implemented and analyze the effects of these sanctions on Iran as a whole and what impact they had on its nuclear ambitions.

BACKGROUND

History of The Iranian nuclear program post-9/11 to 2015

After the United States 2001 invasion of Afghanistan, President Bush referred to Iran as a member of the Axis of Evil in his 2002 State of the Union Address due to its assessed support of terrorist organizations and attempts at pursuing weapons of mass destruction.⁵ While Iran denied these charges a vocal hardliner group in the Iranian government, spurred on by religious clerics interested in wielding a larger influence in the region, called for greater Iranian action in pursuing a nuclear weapons program. Some analysts speculated that the 9/11 terrorist attacks might have shifted the Iranian emphasis away from chemical and biological weapons to nuclear weapons in order to draw a more distinct line between Iran and terrorist organizations who favored those tactics.⁶

The first sanctions against Iran, post 9/11, occurred on September 25, 2001 with the issuance of EO 13324 which focused on financial transactions that supported terrorist activities and organizations.⁷ The major goal of the United States during this period was to reduce Iran's strategic capability to support terrorism with a secondary focus on Iran's nuclear program.⁸ Later In 2002, the Mujahedin-e-Khalq, a resistance organization inside Iran, provided the United States with information which led to the identification of secret Iranian nuclear research locations. This revelation, combined with the discovery that Iran sold military weapons to the Palestinian Authority and possibly clandestinely influenced the new Afghan government, led to a worsening of relations between the United States and Iran.⁹ The discovery of new nuclear locations coincided with the delivery of a Russian built nuclear reactor shell in November of 2001 that led some US analysts to re-affirm their stance that Iran was pursuing a nuclear weapon.¹⁰ However, following the

United States invasion of Iraq in 2003, Iran voluntarily suspended its uranium enrichment program.¹¹

In 2005 Mahmoud Ahmadinejad, a hardliner who supported the creation of an Iranian nuclear weapons program and disavowed the UN resolutions on the issue, was elected President of Iran. That same year the Bush Administration issued EO 13382 which targeted individuals associated with the Iranian weapons of mass destruction program by blocking access to monies stored in the United States and outlawing financial transactions with American persons.¹² In 2006, Iran reinforced its nuclear position by restarting uranium enrichment at Natanz and re-opening a heavy-water production plant in Arak. President Ahmadinejad also broke off talks with Britain, France and Germany after refusing to halt Iran's uranium enrichment program.¹³

That action precipitated the passage of UN Resolution 1737, which was passed unanimously by the United Nations Security Council.¹⁴ This resolution sanctioned the sale, supply or transfer of any enrichment-related material that could contribute to Iran's ability to enhance its nuclear program.¹⁵ It also banned states from providing technical training, financial assistance or brokering, and froze financial assets of individuals in the Iranian government associated with the nuclear program while making it illegal for Iran to export nuclear related material.¹⁶

After many failed diplomatic efforts it is suspected that the United States and Israel began planning a cyber-attack that would disable computers that Iran used to control its uranium enrichment centrifuges.¹⁷ President Bush allegedly approved the creation of the "Olympic Games" program in 2006 as a compromise with Israel to hinder the Iranian nuclear program with a non-kinetic strike versus an Israeli military

operation.^{18,19} However, President Bush left office before the virus could be operationally deployed.

While the United States and Israel were allegedly planning a cyber-attack the UN added Resolution 1747 to its sanctions against Iran in 2007. This action applied the 2006 sanctions against a broader range of individuals and groups associated with arms manufacturing, military weapons and heavy industry that had ties to Iran's nuclear programs.²⁰ In March of 2008 the United Nations instituted Resolution 1803 that built upon Resolutions 1737 and 1747 and named specific Iranian individuals involved in the research, production and acquisition of nuclear material and banned them from traveling outside of Iran while freezing their financial assets.²¹

The inauguration of President Barak H. Obama in 2009 led to a shift in United States strategy towards Iran. While the Bush administration decided against engaging Iran in face-to-face interactions, the Obama administration sent its Secretary of State to participate in the nuclear talks held by Britain, China, France, Germany and Russia (P5+1). The Obama administration also attempted to open new diplomatic communications by focusing on multi-level interactions between numerous diplomats.²² Along with increased communications channels the administration allegedly decided to authorize the initial use of a cyber-attack against Iran and then continued with another three variations of the virus, now known as Stuxnet, from the middle of 2009 to 2011.²³

The world became aware of Stuxnet in 2010 when cyber analysts discovered multiple computers infected with the virus.²⁴ After analyzing Stuxnet, it was determined that the virus only targeted specific industrial systems designed by Siemens, which had made the Iranian centrifuge monitoring software²⁵. Further, Iran admitted that its Bushehr

nuclear plant was suffering from technical difficulties but did not admit the damage was caused by cyber activities.²⁶ As Stuxnet continued its attack another 1,000 centrifuges were taken offline accounting for one fifth of Iran's operational capacity.²⁷ Since the world media had discovered the virus, both the Americans and Israelis allegedly decided there was little to lose by continuing to employ it.²⁸

In 2010, the IAEA released a new report declaring that Iran was not abiding by the United Nations resolutions to halt its heavy water related projects. Further, the IAEA contended that Iran could be conducting nuclear related activities with its military and attempting to create a nuclear payload for a missile.²⁹ In response to the IAEA report the UN issued Resolution 1929 which added additional financial and commercial sanctions against Iran that banned it from investing in nuclear material from other countries, halted financial actions taken by Iran's Islamic Revolutionary Guards Corps, authorized UN member states to ban their companies from working in Iran and to stop providing shipping insurance to Iranian vessels.³⁰

This was followed by new sanctions from the United States and EU specifically targeting the Iranian central bank, military sales to include heavy weapons and missiles systems, and at least 40 government officials through travel bans and asset freezes.³¹ These actions included the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 (CISADA) that targeted Iran's petroleum sector. Specifically, it made it illegal for individuals from making investments of \$20,000,000 or more into Iran's petrochemical industry, outlawed assisting Iranian petroleum refining resources and sanctioned foreign banking and property transactions with Iran.³²

Between 2011 and 2012, the Iranian nuclear program took dramatic steps forward as the damaged centrifuges at Natanz were repaired and began producing enriched uranium at post-2010 levels. The Iranian government also declared that it was beginning construction on an additional 3,000 advanced uranium-enrichment centrifuges at the Fordow Fuel Enrichment plant, which would allow the Islamic Republic to create the necessary nuclear materials of five percent and twenty percent enriched Uranium-235.³³

In Mid-2012 the P5+1 again tried to engage Iran in talks to limit its capability to produce a nuclear weapon. Prior to the talks, the IAEA released a report stating that Iran had not stopped enrichment activities in nuclear facilities as agreed upon and had produced 6197 kg of U-235 enriched to 5% and 145.6 kg of U-235 enriched to 20%.³⁴ The disagreement between the parties centered on Iran's reluctance to accept a freeze on its production of uranium enriched to 20 percent purity, as reported by the IAEA.³⁵ In July of that year, the EU sanctions that had been approved prior to the P5+1 talks with Iran went into effect and embargoed the export of petrochemical equipment and the import and transport of crude oil, petroleum and petrochemical products to Iran.³⁶

Six months after the new sanctions were implemented, Iran's oil minister admitted they had a dramatic impact on Iranian oil sales as petroleum exports fell 40 percent over a 12 month period.³⁷ During this same timeframe, the Iranian Rial fell to its lowest point in value against the US Dollar (26,500 Rial to one US Dollar)³⁸ and, combined with the lack of oil revenues, are estimated to have helped create the sustained 30% inflation increase in the Iranian economy which reached a high water mark of 59.02%.³⁹ Some analysts assessed the sanctions were doing exactly as Iran's oil minister

admitted because the financial market became incredibly volatile and Iran was forced to sell oil at discount rates to any country willing to buy from them.⁴⁰

In February of 2013 the United States instituted another round of sanctions against Iran with the passage of the Iran Freedom and Counter-Proliferation Act of 2012 and the signing of EO 13645 that targeted bank transactions of countries, individuals, and entities that purchased, acquired, sold, transported or marketed petrochemicals, petroleum or petroleum products to or from Iran.⁴¹ These sanctions prohibited Iran from purchasing or acquiring raw materials to include raw and semi-finished metals, coal or industrial software.⁴² Obama then signed EO 13622 which outlawed the sale of US Bank notes or precious metals to Iran and sanctioned foreign financial institutions known to have conducted business with the National Iranian Oil Company of the Naftiran Intertrade Company.⁴³ The United States Congress also attached additional sanctions to the National Defense Act of 2013 that prohibited underwriting services or insurance for any sanctioned materials that were shipped internationally to or from Iran.⁴⁴

Two weeks later the P5+1 convened in Kazakhstan with the negotiators proposing that Iran be allowed to continue operating its enrichment plant at Fordow and that Iran be allowed to retain a small amount of 20 percent enriched uranium to produce medical isotopes.⁴⁵ After the negotiations ended the Iranian delegation declared that a significant milestone had been accomplished, however, during the next round of talks in April 2013, the P5+1 determined that they were too far apart on substantive issues and concluded the talks without resolution.⁴⁶ In May 2013 the United States proposed further financial sanctions against individuals associated with the Iranian nuclear program and Congress introduced a law that would deny Iran access to \$100 billion stored in overseas banks.⁴⁷

The Iran Sanctions Loophole Elimination Act referenced above was never passed into law, but, it could have influenced Iranian actions later that year.

A turning point in Iranian and Western interactions occurred in June 2013 when Iran elected Hassan Rouhani as President. Some analysts viewed Rouhani as a centrist candidate with a more pragmatic view of relations with the West and as a leader who received a mandate from the Iranian people to prioritize Iran's economic recovery over continuing its nuclear program.⁴⁸ In August of 2013 the IAEA found that Iran had created 3.8 kg of 20% enriched U-235 during the reporting period,⁴⁹ which was a decrease from the previous quarter's production of 15 kg.⁵⁰ Rouhani continued his outreach efforts in a Washington Post Op-Ed where he struck a conciliatory tone remarking that his election paved the way for new constructive dialogue with the West regarding Iran's nuclear program.⁵¹ The next month he expanded this message in a speech to the United Nations General Assembly where he claimed that nuclear weapons were not a part of Iran's security doctrine, and it was imperative to remove any concerns about its peaceful nuclear ambitions.⁵²

Immediately following these actions the P5+1 met with Iran in Geneva and held substantive talks where both sides laid the groundwork for a future agreement.⁵³ The IAEA followed this statement with its quarterly report which announced an agreement with Iran that would institute practical measures that allowed the IAEA access to multiple nuclear sites including the Heavy Water Reactor in Arak and the Gchine mine in Bandar Abbas.⁵⁴ Ten days later the P5+1 and Iran agreed to the JPA which allowed Iran to operate its nuclear program as long as it reduced existing stockpiles of 20 percent enriched U-235 by half, did not enrich any uranium over 5 percent, halted

construction/technical advancements at three of its nuclear facilities, did not construct any new enrichment locations nor any facilities capable of accumulating and enriching uranium and agreed to enhanced IAEA monitoring for the next 6 months.⁵⁵ In exchange, the P5+1 agreed to suspend US and EU sanctions on Iranian crude oil sales, petrochemical exports and create financial exceptions for Iran to pay UN obligations.⁵⁶

During the following six months Iran implemented changes to its nuclear program as specified in the JPA. The IAEA verified that no uranium had been enriched above 5 percent, the stockpile of 20 percent U-235 was decreased from 209.1 kg to 38.4 kg, no new facilities had been constructed and the IAEA had been granted access to storage facilities and centrifuge assembly workshops.⁵⁷ After the positive reports on Iran's nuclear program both sides agreed to extend the P5+1 negotiations an additional four months. In order to facilitate this extension the United States agreed to un-freeze \$2.8 billion of Iranian assets as long as Iran diluted additional uranium, or converted it into reactor fuel.⁵⁸

The talks between the P5+1 and Iran continued through 2014 and ended in 2015 when the parties involved signed the Joint Comprehensive Plan of Action. The deal suspended Iran's ability to create a nuclear weapon by reducing installed centrifuges from 19,000 to 6,104, prohibited the enrichment of uranium over 3.67 percent for 15 years, placed excess nuclear infrastructure in IAEA monitored storage spaces and barred the construction of new enrichment facilities in exchange for the lifting of sanctions by Western powers.⁵⁹

RESEARCH CRITERIA

United States/EU/UN strategy

The criteria listed below will determine if United States, EU and UN efforts met the intended goals of preventing Iran from continuing its nuclear weapons program and forcing its government to answer the international communities concerns regarding its nuclear activities. To answer those questions the goals of the United States, EU's and UN's sanctions program will be analyzed by the impact each round of sanctions had on preventing Iran from obtaining a nuclear weapon.

According to the United States government, the purpose of the sanctions against Iran's nuclear program was to, "censure Iran and prevent its further progress in prohibited nuclear activities, as well as to persuade Tehran to address the international community's concerns about its nuclear program".⁶⁰ These sanctions targeted multiple sectors of the Iranian government to include the energy sector, petrochemical sector, and shipping/shipbuilding sectors, insurance/underwriting sector, and the automotive sector.⁶¹

Even though the United States had specific goals in mind when the sanctions programs were implemented, there was never a consensus agreement amongst policymakers and Presidential administrations on how to evaluate the impact of these sanctions on accomplishing its stated goals.⁶² After 9/11 the United States did not issue a comprehensive set of sanctions against Iran, instead they chose a piecemeal approach that focused on Iran's nuclear program and its possible support to terrorism. For example, between September 12, 2001 and January 31, 2013, Iran exported 2,383 barrels of oil per day, on average,⁶³ resulting in more than \$500 billion in government revenues;⁶⁴ however, the United States did not specifically target Iranian oil export transactions until 2012.⁶⁵ Prior to the 2012 oil export sanctions, the United States focused on excluding Iran

from the international financial system through discussions with 145 banks in 60 countries.⁶⁶ The 2012 sanctions implemented legislation focused on cutting Iran's Central Bank off from the international financial system by penalizing institutions that did business with that specific bank⁶⁷ instead of convincing hundreds of international banks to cooperate with American authorities.

The main goal of the UN sanctions program, which began in 2005, was to bring Iran in line with the requirements of the NPT after the IAEA declared that Iran was not compliant with the NPT safeguards agreement,⁶⁸ or Article I and Article II of the NPT. Article I states that signatories will not transfer nuclear weapons or assist any non-nuclear-weapons state in creating or acquiring a nuclear weapon⁶⁹ and Article II states that countries will not manufacture nor receive assistance in creating nuclear weapons⁷⁰. Iran has not transferred nuclear weapons to any other state but it is believed by the IAEA that they have attempted to create a nuclear weapon.

The EU enacted its own sanctions in 2010 with the goal of “persuad[ing] Iran to comply with its international obligations and to constrain its development of sensitive technologies in support of its nuclear and missile programmes.”⁷¹ The EU brought its program in line with United States sanctions by focusing on Iran's central bank, trade, energy production and the transportation sector⁷² and, in 2012, led the ban on importing petrochemical products from Iran to the European Union.⁷³

United States, EU and UN sanctions prevented financial actions and trade within their borders but the UN could only request, not force, its members observe resolutions. Some member states continued their commercial and financial relationships with Iran. For example, South Korea imported 45.55 million barrels of oil in 2012⁷⁴ while Japan

imported 190,000 barrels of oil per day in 2012 and increased this amount to 300,000 barrels per day during the first part of 2013.⁷⁵ US export sanctions did not impact Japanese and South Korean trade with Iran because, “the two countries have been the main sources of the \$700 million per month in direct hard currency payments to Iran for oil.”⁷⁶ The United States sanctions did allow export payments as long as it was accomplished through local bank accounts inside Iran.⁷⁷ Japan and South Korea did reduce their reliance on Iranian oil, due to US pressure, and by 2014 were importing only 190,000 barrels of oil per day and 130,000 barrels of oil per day, respectively, on average.⁷⁸

China also released a statement in 2012 stating that, “The United States hopes countries across the world, especially the major powers, can join it and exert pressure on and even take military action against Iran. China does not need to follow suit”.⁷⁹ This statement was highlighted in 2013 when Iranian oil represented 7.6% of all Chinese oil imports, making Iran the 6th largest supplier of oil to China.⁸⁰ China did cut imports after sanctions were enacted and in 2011 it imported 550,000 barrels of oil per day, on average, but by 2014 imports were reduced to 410,000 barrels of oil per day, on average.⁸¹

Evaluation of Impact on Iranian nuclear program Using United States/UN/EU Sanctions Criteria

The direct impact of United States sanctions on the Iranian nuclear weapons program is difficult to determine. According to Iran, the answer is yes and no. At a 2009 conference of Iranian bankers, nine focus areas were determined to have impacted the Iranian economy with international sanctions appearing on the list. Surveys conducted at the conference found that Bankers believed sanctions were rated seventh (out of nine

criteria) in impact on the Iranian economy.⁸² Essentially, the Bankers believed the international sanctions were tertiary to government actions in the environment.

However, in 2011 multiple Iranian officials admitted that the 2010 sanctions against investing in Iran's petrochemical industry, and financial sanctions levied against Iranian banks, had an adverse impact on Iran's ability to produce oil and find foreign partners to
However, in 2011 multiple Iranian officials admitted that the 2010 sanctions against investing in Iran's petrochemical industry, and financial sanctions levied against Iranian banks, had an adverse impact on Iran's ability to produce oil and find foreign partners to explore oil fields inside its borders, thus impacting its economy.⁸³

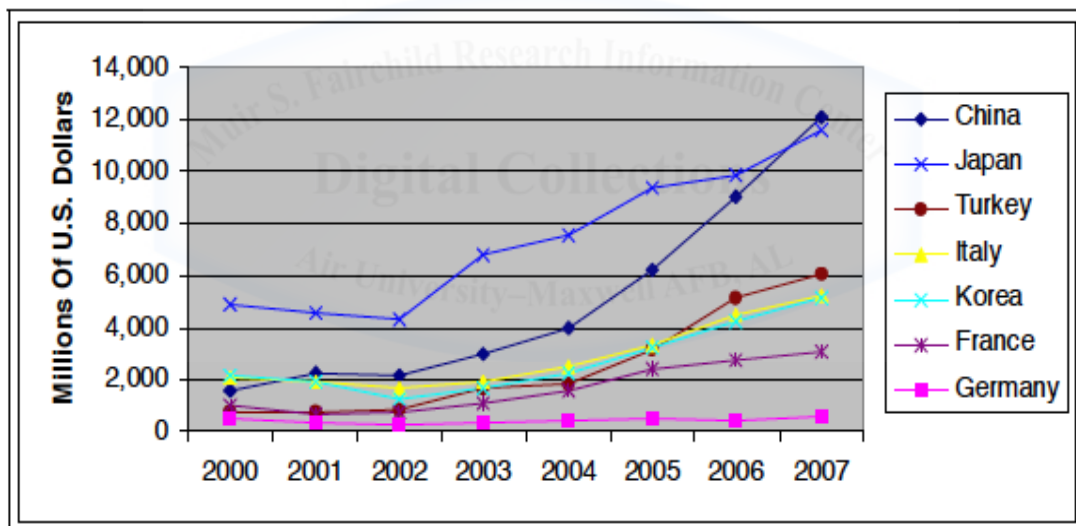
United States sanctions impacted Iranian nuclear weapons capabilities and effectively met the United States government's goals of censuring Iran, prohibiting further nuclear weapons capabilities and forcing Iran to explain its nuclear program to the world. However, a number of factors not directly linked to United States sanctions policy also impacted Iran. For example, the rise of oil prices to record highs from 2001 to 2006, then a subsequent crash of oil prices to record lows and the election of an Iranian President who instituted populist internal policies and increased domestic spending.

The indirect impact of sanctions can be judged by the economic and political impacts they had on Iran's will to maintain and sustain a nuclear weapons program. This includes internal Iranian financial obligations, internal financial markets and the impacts those had on the Iranian economy. This also includes policies implemented by the Iranian government and the response by the Iranian people to include presidential elections.

The first round of United States sanctions post-9/11 focused on Iran's support of terrorism and on blocking financial assets of entities that supported terrorism or terrorist

related organizations to include those that created weapons of mass destruction.⁸⁴ These sanctions added on to EO 13059, which outlawed the import and export of goods by United States entities with Iran to include using individuals in a third party role to conduct these transactions.⁸⁵

Many United States companies, however, sold their goods to individuals in third party countries, such as China, who then re-sold the goods to Iran.⁸⁶ Of the top five countries that benefited from Iranian exports, four (Japan, Turkey, Italy and Korea) were considered close allies of the United States government and accounted for 33.8% of total exports while China accounted for 13.8% of Iranian exports.⁸⁷



Source: IMF, Direction of Trade Statistics

Figure 1. Iran's Exports to Select Countries, FY2000-FY2007. (Adapted from the Government Accountability Office (GAO), "Iran Sanctions: Impact in Furthering U.S. Objectives is Unclear and Should be Reviewed", GAO Highlights, December 2007).

The United States sanctions described above seemed to have had limited-to-no impact on Iran's international trade as Iran's export growth rate between 2002 and 2006 was 19 percent⁸⁸ and Iran's exports values rose from \$30 billion in 2002 to \$60 billion in 2006.⁸⁹ In comparison, prior to the implementation of this round of sanctions the value

of Iran's exports was \$13.9 billion in 1998 and \$23 billion in 2000.⁹⁰ Another factor that may have offset the impact of sanctions on Iran was the global rise in oil prices that started in 2002 when the average price for a barrel of oil was \$21.20. This price tripled to \$63.10 by 2006.⁹¹

The sanctions implemented between 2002 and 2009 also seemed to have limited-to-no impact on Iran's nuclear ambitions and ability to obtain material for their nuclear program. Iran constructed undeclared nuclear facilities in 2002, refused to suspend uranium enrichment in 2003, restarted creation and testing of centrifuges in 2004, resumed uranium conversion in 2005 and removed IAEA seals at multiple uranium enrichment sites in 2006.⁹² In fact, sanctions seemed to be counterproductive to United States efforts of censuring Iran and deterring an Iranian nuclear weapons program when Mahmoud Ahmadinejad was elected President in 2005. Ahmadinejad ran on a populist platform that focused on alleviating poverty and creating jobs⁹³ while other candidates ran on a platform of negotiating with the West, which did not seem to resonate with Iranian voters.

In 2006, the UN joined the United States efforts by requesting that its member states enact multiple sanctions against the Iranian government. UNSC Resolution 1696 called upon its member states to, "prevent the transfer of any items, materials, goods and technology that contribute to Iran's enrichment-related and reprocessing activities and ballistic missile programmes"⁹⁴ while UNSC 1737 attempted to, "prevent the supply, sale or transfer...of all items, materials, equipment, goods and technology which could contribute to Iran's enrichment-related, reprocessing or heavy water-related activities, or to the development of nuclear weapon delivery systems..."⁹⁵.

Again, it is difficult to assess the direct impact of the UN sanctions against Iran, but, it is clear that the sanctions did not meet the UN’s stated goal of bringing Iran in line with the NPT as Iran continued to enrich uranium between 2006 and 2010 and rebuffed IAEA attempts to inspect Iranian nuclear facilities while still producing commercial parts for various nuclear related activities. It is possible that Iran was not concerned with the UN sanctions as China and Russia were already ignoring similar US sanctions and the EU hadn’t issued any similar sanctions and its member states still purchased oil from Iran and European firms sold goods in Iran, such as Siemens selling software and material to the Iranian government in 2006.⁹⁶

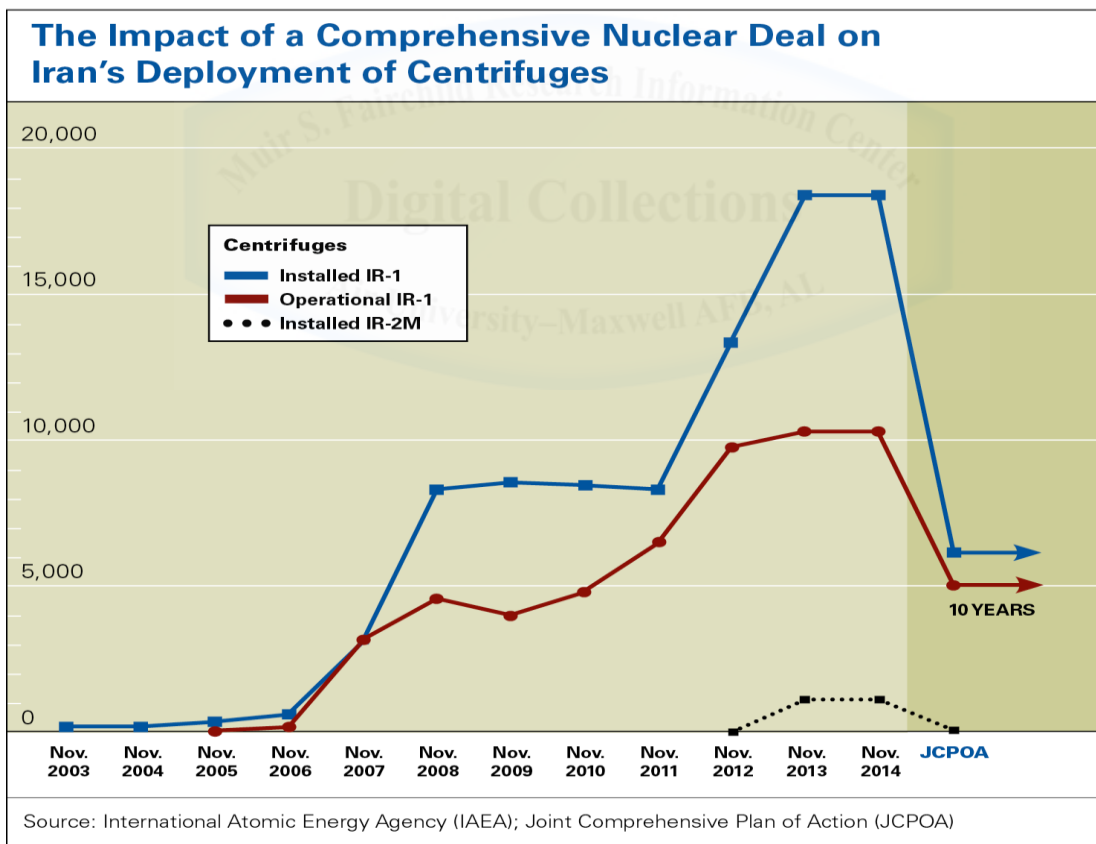


Figure 2. Amount of installed and operational centrifuges by year, 2003-2014. (Adapted from The Arms Control Association. “Section 3: Understanding the JCPOA.” Washington DC, 10 August 2015).

Between 2010 and 2014 the United States, EU and UN enacted further incremental sanctions against Iran culminating in multiple bans on Iranian imports of petrochemicals from the United States and European Union. The Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 focused on Iran's gasoline imports by targeting banks that sold over \$1 million worth of fuel to Iran and/or equipment that allowed Iran to make or import gasoline.⁹⁷ The EU issued similar sanctions that outlawed the, "sale, supply or transfer of key equipment and technology for refinement, liquefied natural gas, exploration or production".⁹⁸ Finally, the UN also issued additional sanctions in 2010 with Resolution 1929 which, "[expanded] an arms embargo and [tightened] restrictions on financial and shipping enterprises related to proliferation-sensitive activities".⁹⁹

In 2012 the EU implemented sweeping sanctions against Iran by outlawing the import of Iranian oil into European Union territories by member states and incorporated companies.¹⁰⁰ The United States also sanctioned Iran's oil, gas and petrochemical production with the passage of the Iran Threat Reduction and Syria Human Rights Act of 2012. Specifically, these sanctions expanded the ban on transportation of crude oil, underwriting of oil shipments and sanctions on individuals in the Iranian petrochemical industry.¹⁰¹

Instead of focusing on uranium enrichment capabilities, the whole Iranian economy was targeted. It is more difficult to determine the impact of these sanctions on Iran's nuclear weapons program because these sanctions focused directly on Iran's national revenue streams. Applying direct criteria to analyze the impact of these sanctions

will be difficult and an in-direct approach will need to be employed. Specifically, how did the impact on Iran's ability to export oil impact its nuclear program?

Financial restrictions

In 2008, global oil prices fell from a high of \$133.93 a barrel to less than \$41.44 a barrel.¹⁰² This drop in prices impacted Iran disproportionately because oil and gas exports accounted for close to 60% of Iran's fiscal revenues in 2007 and 45% of revenues in 2008.¹⁰³ Also, during the oil price bubble Iran's "fiscal spending and credit growth increased at the same time as export revenues and oil prices, resulting in an overheating of the economy and a surge in inflation".¹⁰⁴ Ahmadinejad employed a populist political agenda which expanded public subsidies on items such as gasoline, housing and food which accounted for at least 25% of Iran's GDP.¹⁰⁵ This forced Iran to draw from its Oil Stabilization Fund (OSF), which was created by the Central bank in 2001 to counter oil price fluctuations, to pay for discretionary spending.¹⁰⁶

International sanctions did have an effect on forcing Iran to utilize its OSF to pay these financial costs because they had closed Iran's banking system to the international market¹⁰⁷ and the Central Bank of Iran could not access lines of credit in Europe or the United States.¹⁰⁸ The Iranian government did try to offset these financial restrictions by moving most of its assets to Iranian and Asian banks and attempting to bolster its reserves with the purchase of gold bullion¹⁰⁹ but the inability to acquire credit forced Iran to borrow from itself, which increased inflation.

The 2012 United States and EU petrochemical sanctions had a larger impact on Iran than the previous sanctions. Prior to 2012, multiple EU member states imported oil

from Iran to include 34.2% of Greece’s oil imports, 14.9% of Spain’s oil imports and 12.4% of Italy’s oil imports.¹¹⁰ The loss of these imports had a dramatic impact on Iran’s revenue. Petrochemical exports accounted for \$118 billion of revenue for Iran in the 2011/2012 fiscal year but dropped 47%, to \$63 billion, in the 2012/1013 fiscal year and again by 10% to \$56 billion in the 2013/2014 fiscal year.¹¹¹ This was closely followed by a devaluation of the Rial against the United States Dollar (USD) by almost 50% from 12,260 Rial to 1 USD in fiscal year 2012/2013 to 24,770 Rial to 1 USD in fiscal year 2013/2104 created by the increased inflation rates.¹¹² Iran’s oil sales to Asian markets was also impeded by these sanctions as EU and United States firms were no longer allowed to provide underwriting services¹¹³ to Iranian petrochemical shipments, which caused Iranian oil exports to drop by 1 million barrels per day in July of 2012.

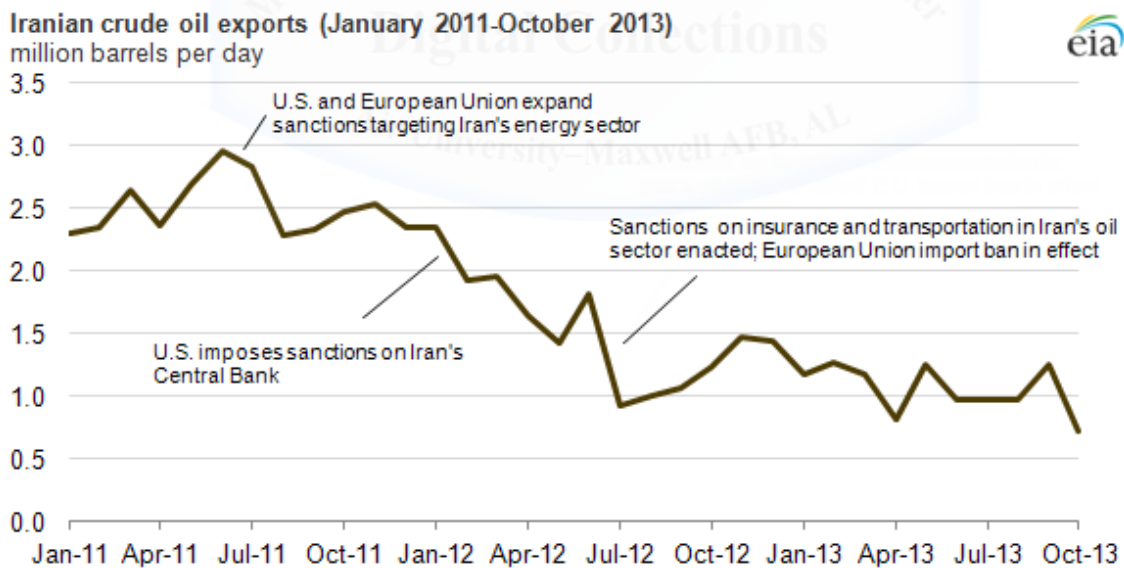


Figure 3. Iranian Crude oil Exports (January 2011-October 2013). Adapted from the U.S. Energy Information Administration, “Iran’s Oil Exports Not Expected To Increase Significantly Despite Recent Negotiations”, 10 December 2013.

Previous Iranian withdrawals from the OSF, between 2005 and 2008, might have been substantial enough to blunt the loss of oil revenue from the 2012 sanctions. In fiscal

year 2005/2006, Iran withdrew \$35.3 billion dollars; in fiscal year 2006/2007 Iran withdrew \$45 billion; and in fiscal year 2008/2009 Iran withdrew an additional \$45 billion.¹¹⁴ The total amount withdrawn during that timeframe was \$125.3 billion; by comparison, Iran lost \$62 billion in oil revenues between 2011 and 2013. If Iran had not enacted higher subsidies and increased government spending, it is possible that OSF funds could have covered the losses during the 2011 to 2013 timeframe, with an additional \$63.3 billion in reserves. It is also possible that these cash reserves could have not only impacted Iran's nuclear negotiations but also the 2013 presidential elections that resulted in the election of a more moderate Rouhani.

The oil sanctions, combined with the previous sanctions passed in 2002, 2006 to 2008, and 2010, and the fall in global oil prices, all played a role in disabling Iran's internal economy. Limited imports led to the sustainment of a black market that conducted \$12 billion a year in transactions, which helped inflate prices as the government was unable to control the price of goods for sale.¹¹⁵ Iran's GDP growth was also impacted by these same factors and shrank from 6.5% annual growth in 2010 to -6.63% annual growth in 2012.¹¹⁶ Part of this is explained by Iran's inability to borrow money from outside lenders to pay for government spending. The oil embargo and lack of imports also contributed to the drop in value of the Rial and an increase of inflation between 50% and 70% in 2012.¹¹⁷ The other part is possibly explained by the governmental mismanagement during the Ahmadinejad administration.

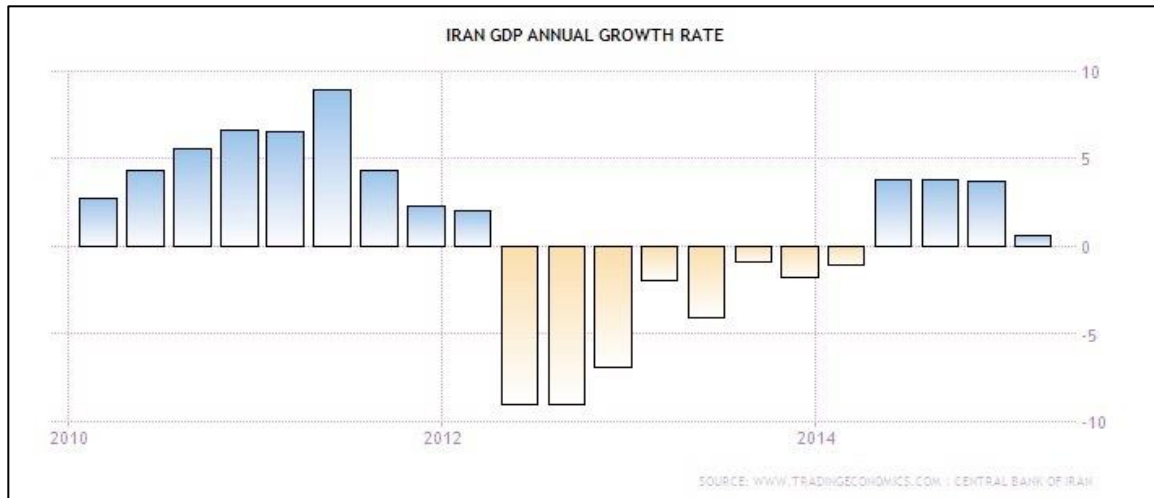


Figure 4. Iranian GDP Annual Growth Rate, 2010-2015. (Adapted from tradingeconomics.com and the Central Bank of Iran, “Iran GDP Annual Growth Rate” 12 October 2015).

The failing economy, government mismanagement and rising inflation prices seemed to have resulted in the election of Rouhani and his platform of improving relationships with the West. By signing the JPA, Iran won key concessions from the United States, UN and EU including the easing of the EU ban on its member states providing shipping insurance to Iranian oil tankers¹¹⁸, the resumption of petrochemical sales and precious metal trading¹¹⁹, and the sales of aircraft parts to several Iranian airlines.¹²⁰ The lifting of these sanctions are expected to significantly impact Iran’s economy in a positive manner by allowing Iran to, “export crude oil without restriction”,¹²¹ immediately access \$100-\$150 billion of hard currency from previous oil sales,¹²² and could spur economic growth through, “stronger oil production and sanctions relief [that] could bring real GDP growth to 6-7%”.¹²³

ANALYSIS OF RESULTS

With the recent signing of the JPA it appears that the sanctions initiated by the United States, and its allies, succeeded in meeting the goals established just after 9/11. However, it is more likely that the sanctions implemented from 2002 to 2010 played a secondary role in Iran's agreement to suspend its uranium enrichment and, essentially, give up their nuclear weapons ambitions. The primary factors that led to the Iranian nuclear deal was the election of Ahmadinejad in 2006, increased government spending and withdrawals from the OSF in 2007, the burst of the oil bubble in 2008 and the 2012 United States and EU petrochemical sanctions.

The sanctions that had the largest impact on Iran's nuclear ambitions were the ones focused on Iran's economy and not those focused on Iran's nuclear weapons program. It should also be noted that the multi-lateral sanctions implemented in 2010 had a broader global effect on Iran's ability to integrate itself into the world economy than any of the unilateral United States sanctions implemented. In fact, the passage of the Comprehensive Iran Accountability, Sanctions, and Divestment Act in 2010 empowered the United States government to act against financial organizations that were working with Iran because, "it gave the Secretary of the Treasury the authority for the first time to require U.S. banks to terminate correspondent banking relationships with foreign banks that knowingly engaged in significant transactions with designated Iranian banks."¹²⁴ This act, combined with the Obama administrations work with the UN to enact sanctions against the government of Iran and the IRGC empowered individual countries to take similar actions.¹²⁵

Another possible reason the pre-2010 sanctions did not have the desired effect against the Iranian nuclear program could be due to the 2,411 sanction exceptions that were granted to United States companies by the Office of Foreign Assets Control.¹²⁶ Medical and agricultural aid to Iran was allowed under the sanctions program companies like Citibank, General Electric, Pepsi and even an American company that bid on building a natural gas pipeline to Europe, were permitted to do business with Iran.¹²⁷ These exceptions essentially took away the pressure of sanctions on Iranian leadership and eroded the effectiveness of the laws that were passed.

Additionally, Iran ceased allowing the IAEA to investigate undeclared nuclear facilities and activities in 2006 after the IAEA referred Iran's noncompliance to the United Nations Security Council.¹²⁸ This made the IAEA's job difficult since, "the Agency's legal authority to pursue the verification of possible nuclear weapons related activity is limited."¹²⁹ Further, the UN restrictions placed on Iran in 2006, 2007, 2008 and 2010 focused strictly on its nuclear program¹³⁰ and, as stated previously, the restrictions outlined in these resolutions were not binding on member states. Finally, the United Nations Security Council did not increase the IAEA's authority making it difficult for the nuclear monitoring agency to enforce treaties because its legal power is derived from the states that it investigates.

PROBLEM AREAS FOUND WITH SANCTIONS

The incremental sanctions approach did not achieve the United States goal of preventing Iran from furthering its nuclear weapons program. In fact, both EO 13224 (issued in 2001) and EO 13382 (issued in 2005) targeted specific groups and organizations that supported Iran's nuclear proliferation, but did not specifically target

the Iranian government. Both of these Executive Orders blocked United States persons from conducting business with specific Iranian companies instead of blocking United States persons from conducting business with the government of Iran.

Another issue with the United States sanctions against Iran was that until 2011 the United States did not fully enforce the Iran Sanctions Act. It was not until a 2011 IAEA report regarding Iran's attempt to possibly create nuclear detonator technology that the United States decided to impose additional sanctions on the sale of gasoline and refinery products to Iran.¹³¹ It also took until 2012 for the EU to issue sanctions against providing shipping insurance to Iranian oil tankers, which prevented Iran from shipping its oil to Asian nations like China, South Korea and Japan.¹³²

Finally, during the ten years after 9/11, the sanctions on Iran's nuclear program did not deter Iran from continuing to pursue their nuclear ambitions. The sanctions had an adverse impact on the economy, but the political leadership avoided these impacts because of the exceptions that the United States allowed and the lack of enforcing punishments against countries that conducted business with Iran. However, the average Iranian did not have access to the same luxuries as the ruling elite. The general Iranian population was impacted by sanctions that created a black market for everyday goods while increasing inflation in the country because of the limitations on the Iranian banking system. During this same timeframe, the Iranian nuclear program increased the number of active centrifuges, added multiple refining sites and multiplied the amount of enriched uranium. None of the nuclear focused sanctions prevented the Iranian nuclear program from expanding and, more importantly, they did not impact Iran's nuclear capabilities.

The United States also did not account for the use of the OSF to offset the economic impact of the sanctions. However, when the United States chose not to sanction the export of gasoline to Iran prior to 2011 policy makers should have considered the possibility of Iran using previous oil revenues to artificially support its economy. It is possible that American leaders were not able to obtain support from the EU prior to 2011 for petrochemical sanctions and feared that a unilateral ban would end with results similar to efforts in 1996, when the United States attempted to apply sanctions to European and Russian gas companies for attempting to develop gas fields in Iran, only to be rebuffed internationally in their efforts.¹³³ Regardless, the large loopholes, lack of multi-lateral sanctions and inability to enforce United States sanctions efforts against Iran's trading partners resulted in sanctions that did not create a substantial impact on the Iranian nuclear program.

RECOMENDATIONS

The impacts of sanctions programs are difficult to assess because there are numerous outside influences that are unable to be controlled by the governments involved in issuing sanctions. For example, it would have been unlikely that the Bush administration would have been able to forecast the bursting of the oil bubble in 2006 while creating a sanctions program that could address that future possibility. It is also difficult to predict how world leaders will respond to sanctions programs, to include those targeted by sanctions and those expected to enforce the sanctions. It is evident that the sanctions against Iran did not have the impact they were expected to have when they were instituted.

Since 2001 the United States has initiated twenty-one sanctions programs, of which only two have been comprehensive in nature with the remaining nineteen being “targeted” towards specific programs.¹³⁴ The sanctioning process in the United States is complicated and allows both the Executive Branch and the Legislative Branch the power to implement sanctions. After 9/11 the Bush Administration did streamline some of these processes through the USA Patriot Act which gave the Department of Treasury the authority to target suspected organizations and take actions against their financial capabilities.¹³⁵

One failure of the sanctions against Iran was the piece-meal approach that was used: specifically, the failure to target and enforce sanctions against Iran’s petrochemical imports and exports. Admittedly, sanctioning petrochemicals does have an adverse effect on the general population of a country, but the responsibility for those impacts should not fall on the countries implementing the sanctions, rather, on the countries that refuse to abide by international law since their actions (or inactions) are the key reasons for sanctions programs in the first place. The purpose of sanctions should not be humanitarian in nature, as the Secretary General of the UN stated in 1998, “It cannot be too strongly emphasized that sanctions are a tool of enforcement and, like other methods of enforcement, they will do harm.”¹³⁶ The threshold to accept risk in the area of humanitarian distress is a bar that should be raised if national/international security is to be protected.

A second area that should be addressed is the concept of sanction exceptions. The goal of sanctions should be to force a nation to refrain from actions that are considered unacceptable by the rest of the world. This is contravened when private corporations are

permitted to conduct trade with sanctioned countries and undermines the entire effort while providing the sanctioned countries the ability to continue the actions that caused the sanctioning in the first place. Sanction exceptions should not be allowed and companies that conduct commercial activities with sanctioned nations should be prosecuted to the fullest extent of international law possible.

Trade exceptions have also applied to humanitarian aid and this should continue but be better regulated. This includes a better attempt to target leaders of sanctioned nations and enforce those sanctions against political leaders. Organizations issuing sanctions should also express the fact that any suffering a native population endures under sanctions is the responsibility of the leaders of the sanctioned nation, not those nations upholding international law.

Finally, future sanctions programs will need to be enforced completely, or lifted. As seen during the fourteen years of post-9/11 sanctions against Iran, there were many times that sanctions program was not a top priority. Instead of having multiple sanctions over multiple programs there should be one set of sanctions that targets the entirety of the offending country. The implementation of sanctions must also change from a common occurrence to a limited one. By using sanctions as the last step before kinetic warfare, the impact they have on a sanctioned country could be larger.

CONCLUSION

The United States sanctions on Iran's nuclear program did impact Iran's economy but did not directly impact Iran's nuclear capabilities. Multiple factors outside the scope of the sanctions program enabled the effect of the economic sanctions and increased its

impact. Iran was also able to blunt the short-term effects of the UN and United States sanctions in 2006 through subsidy programs, OSF funding and revenues from oil sales.

The 2011 United States and EU sanctions against petrochemicals and shipping insurance crippled Iran's ability to sustain revenue from oil sales. The combination of a drop in world oil prices and increased domestic spending opened Iran to the effects of the previously enacted financial sanctions that forbade international banks from providing credit to Iranian banks. Iran also suffered from China's decision to reduce their dependence on Iranian oil. China was not willing to risk its international reputation and was able to reach deals with other Arab countries to replace the oil provided by Iran.¹³⁷ The combined effect of these issues resulted in the election of a more moderate Iranian administration that ran on a platform of prioritizing the Iranian economy over the nuclear program.

This paper finds that unilateral United States sanctions, from 2001 to 2010, did not have a direct impact on Iran's nuclear program. However, the 2011 sanctions by the United States, EU and UN did have an indirect impact on Iran's nuclear program. The actual sanctions on Iran's nuclear program did not directly deter the Iranian government but the sanctions on shipping insurance and the agreement by EU member states, South Korea, Japan, and China to stop (or decrease) importation of Iranian oil did force the government to respond to Western demands. The earlier sanctions did have an additional effect on Iran because of the prohibitions against extending credit to Iranian banks. It is also likely that extraordinary measures enhanced the impact of the sanctions levied against Iran to include economic conditions and internal Iranian political decisions. Ultimately, the lessons learned from the last 14 years of sanctions against Iran can be

used to improve similar situations in the future. It will be vital for US policy makers to learn from what did and did not work against Iran in order to enforce the JPA and ensure that United States goals, in regards to deterring Iran from obtaining a nuclear weapon, are met.

NOTES

¹ United States Department of State, *Patterns of Global Terrorism 2002*, (Washington, DC: Department of State Press, April, 2013), 77

² President George W. Bush, "2002 State of the Union Address" (address, United States Congress, Washington DC, January 2002)

³ Kenneth Katzman, *Iran Sanctions* (Washington, DC: Congressional Research Service, August 2015), 27.

⁴ The United Nations, *The Implementation of the Joint Plan of Action (JPOA)*, (Vienna, Austria: United Nations Security Council, November 2013), np

⁵ Kenneth Katzman, *Iran: U.S. Concerns and Policy Responses*, (Washington, DC: Congressional Research Service, March 2009), 27

⁶ Anthony C. Cain, *Iran's Strategic Culture and Weapons of Mass Destruction: Implications for US Policy*, (Maxwell, AL: Air War College, 2002), 27

⁷ EO 13224, Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism, 23 September 2001, 49080

⁸ Kenneth Katzman, *Achievements of and Outlook for Sanctions on Iran* (Washington, DC: Congressional Research Service, April 2014), 8

⁹ Kenneth Katzman. *Iran: Current Developments and U.S. Policy* (Washington, DC: Congressional Research Service, April, 2003), CRS-6

¹⁰ Ibid, 3

¹¹ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, November 2013), 4

¹² EO 13382, Blocking Property of Weapons of Mass Destruction Proliferators and Their Supporters, 1 July 2005, 38567

¹³ Katzman, *Iran Sanctions*, 2015

¹⁴ Kenneth Katzman, *Iran Sanctions* (Washington DC: Congressional Research Service, November 2010), 38-39

¹⁵ United Nations Security Council, *Resolution 1737* (New York, NY: United Nations Director General, December 2006), 2

¹⁶ Ibid, 4

¹⁷ John Markoff and David Sanger, "In a Computer Worm, a Possible Biblical Clue", *New York Times*, 29 Sept 2010,

<http://www.nytimes.com/2010/09/30/world/middleeast/30worm.html?r=0>

-
- ¹⁸ David Sanger, "Obama Order Sped Up Wave of Cyberattacks Against Iran", *New York Times*, June 2012, <http://www.nytimes.com/2012/06/01/world/middleeast/obama-ordered-wave-of-cyberattacks-against-iran.html>
- ¹⁹ David Sanger, *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power* (New York, NY: Random House Incorporated, April 2013), 189
- ²⁰ United Nations Security Council, *Resolution 1747* (New York, NY: United Nations Secretary General, March 2007), 5
- ²¹ United Nations Security Council, *Resolution 1803* (New York, NY: United Nations Secretary General, March 2008), 5
- ²² Mark Lander and Nazila Fathi, "U.S. to Joint Iran Talks Over Nuclear Program", *New York Times*, 8 April 2009, <http://www.nytimes.com/2009/04/09/world/middleeast/09iran.html>
- ²³ Sanger, "Obama Order Sped Up Wave of Cyberattacks Against Iran", 2013, 206
- ²⁴ Steven Cherry, interview by Ralph Langer, *How Stuxnet is Rewriting the Cyberterrorism Playbook*, 13 October 2010, <http://spectrum.ieee.org/podcast/telecom/security/how-stuxnet-is-rewriting-the-cyberterrorism-playbook>
- ²⁵ Gary Brown, "Why Iran Didn't Admit Stuxnet Was an Attack", *JFQ: Joint Force Quarterly*, no. 63 (4th Quarter, 2011): 71, <http://www.dtic.mil/doctrine/jfq/jfq-63.pdf>
- ²⁶ *Ibid*, 70
- ²⁷ Sanger, *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power*, 2013, 206
- ²⁸ *Ibid*, 206
- ²⁹ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, May 2011), 7
- ³⁰ United Nations Secretary General, "Resolution 1929", *United Nations Security Council*, 2010, 7
- ³¹ Neil Macfarquhar, "U.N. Approves New Sanctions to Deter Iran", *New York Times*, 9 June 2010, <http://www.nytimes.com/2010/06/10/world/middleeast/10sanctions.html>
- ³² *Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010*, HR 2194, 111th Cong., 2nd Sess., Public Law No: 111-195, (1 July 2010): 124 STAT. 1318
- ³³ Paul Kerr, *Iran's Nuclear Program: Status* (Washington DC: Congressional Research Service, October 2012), 19
- ³⁴ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, May 2012), 3
- ³⁵ Steven Erlanger and Rick Gladstone, "Iran Nuclear Talks End with No Deal", *New York Times*, 24 May 2012, <http://www.nytimes.com/2012/05/25/world/middleeast/iran-nuclear-talks-are-extended-into-second-day.html>
- ³⁶ European Union, "Legislation", *Official Journal of the European Union*, Vol 55 (January 2012): 19/22
- ³⁷ Rick Gladstone, "Iranian Oil Minister Concedes Sanctions Have Hurt Exports", *New York Times*, 7 Jan 2013

³⁸ Yeganeh Torbati, “Iranian Rial Hits Record Low Despite New Effort to Stabilise It”, *Reuters*, 25 September 2012

³⁹ Trading Economics, “Iran Inflation Rate”,
<http://www.tradingeconomics.com/iran/inflation-cpi>

⁴⁰ Business Section, “Iran’s Rial Hits an All-Time-Low against the US Dollar”, *British Broadcasting Company News*, 1 October 2012, <http://www.bbc.com/news/business-19786662>

⁴¹ EO 13645, Authorizing the Implementation of Certain Sanctions Set Forth in the Iran Freedom and Counter-Proliferation Act of 2012 and Additional Sanctions with Respect to Iran, 3 June 2013, 33952

⁴² *National Defense Authorization Act for Fiscal Year 2013 – Subtitle D*, HR 4310, 112th Congress, 2nd Sess., Public Law 112-239 (11 May 2012): SEC 1241

⁴³ E.O. 13622, Authorizing Additional Sanctions With Respect to Iran, 30 July 2012, 4

⁴⁴ *National Defense Authorization Act for Fiscal Year 2013 – Subtitle D*, 2013, Sec 1246, 381

⁴⁵ Steven Erlanger, “As negotiators Ease Demands on Iran, More Nuclear Talks Are Set”, *New York Times*, 27 February 2013

⁴⁶ Christopher Bolan, “The Iranian Nuclear Debate: More Myths Than Facts”, *The Parameters* 43(2) (Summer 2013): 7,
http://www.strategicstudiesinstitute.army.mil/pubs/Parameters/issues/Summer_2013/8_Bolan_Article.pdf

⁴⁷ *Iran Sanctions Loophole Elimination Act of 2013*, S 892, 113th Congress 1st Sess., (8 May 2013): Sec 220A <https://www.congress.gov/bill/113th-congress/senate-bill/892/text>

⁴⁸ Mahmood Monshipouri and Manochehr Dorraj. “Iran’s Foreign Policy: A Shifting Strategic Landscape”, *Middle East Policy*, 20(4) (Winter 2013): 133

⁴⁹ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 28 August 2013), 4

⁵⁰ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran*, (Vienna, Austria: IAEA Board of Governors, 22 May 2012), 3

⁵¹ Hassan Rouhani, “Time to Engage”, *Washington Post*, 19 September 2013,
https://www.washingtonpost.com/opinions/president-of-iran-hassan-rouhani-time-to-engage/2013/09/19/4d2da564-213e-11e3-966c-9c4293c47ebe_story.html

⁵² Hassan Rouhani, “Statement by H. E. Hassan Rouhani President of the Islamic Republic of Iran at the Sixty-Eight Session of the United Nations General Assembly” (Address, United Nations General Assembly, New York, NY, 24 September 2013), 5

⁵³ European Union External Action Service, *Joint Statement by EU High Representative Catherine Ashton and Foreign Minister of the Islamic Republic of Iran Mohammad Javad Zarif* (Vienna, Austria: European Union Printing Service, 16 October 2013), 2

⁵⁴ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 14 November 2013), 3

-
- ⁵⁵ P5+1 and Iran, *Joint Plan of Action* (Vienna, Austria: European External Action Service, 24 November 2013), 1-2
- ⁵⁶ *Ibid*, 3
- ⁵⁷ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 23 May 2014), 1
- ⁵⁸ David Sanger, "Negotiators Agree to Extend Iran Nuclear Talks Four More Months, Diplomats Say", *New York Times*, 18 July 2014
- ⁵⁹ P5+1, *Joint Comprehensive Plan of Action* (Vienna, Austria: European External Action Service, 14 July 2015), 6-9
- ⁶⁰ United States Department Of State, "Iran Sanctions", <http://www.state.gov/e/eb/tfs/spi/iran/index.htm>, np
- ⁶¹ United States Department of State, *Overview of U.S. Sanctions on Iran Pertaining to Activities and Transactions by non-U.S. Individuals and Entities* (Washington, DC: State Department Press, 28 March 2014), 4, <http://www.state.gov/documents/organization/224453.pdf>
- ⁶² Patrick Clawson, "U.S. Sanctions", *United States Institute of Peace*, <http://iranprimer.usip.org/resource/us-sanctions>
- ⁶³ U.S. Energy Information Administration, "International Energy Statistics", <http://www.eia.gov/beta/international/>
- ⁶⁴ Antoine Heuty, "Iran's oil and Gas Management", *Revenue Watch Institute*, February 2012, 1
- ⁶⁵ Obama, 2012, 4
- ⁶⁶ Katzman, *Iran Sanctions*, 2015, 26
- ⁶⁷ *Ibid*, 33
- ⁶⁸ IAEA Director General, *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 24 September 2005), 2
- ⁶⁹ The United Nations, *The Treaty on the Non-Proliferation of Nuclear Weapons* (Geneva, Switzerland: United Nations Printing Office, 5 March 1970), 4, <http://www.state.gov/documents/organization/141503.pdf>
- ⁷⁰ *Ibid*, 5
- ⁷¹ The European Union, "The European Union and Iran", http://eeas.europa.eu/top_stories/2012/130412_iran_en.htm
- ⁷² The Council of the European Union, *Council Regulation (EU) 691/2010 of 25 October 2010 on restrictive measures against Iran and repealing Regulation (EC) No 423/2007*, Official Journal of the European Union, 25 October 2010, L 281/1-2
- ⁷³ The Council of the European Union, *Council Regulation (EU) No 267/2012 of 23 March 2012 concerning restrictive measures against Iran and repealing Regulation (EU) No 961/2010*, Official Journal of the European Union, 23 March 2012, L 88/1
- ⁷⁴ Anthony Cordesman, Robert M Shelala, Omar Mohamed, *The Gulf Military Balance: The Gulf and the Arabian Peninsula*, (Washington, DC: Rowan & Littlefield, 2014), 58
- ⁷⁵ *Ibid*, 58-59
- ⁷⁶ Katzman, *Iran Sanctions*, 2015, 36

⁷⁷ Ibid, 36

⁷⁸ Ibid, 22

⁷⁹ Wang Yan, "China Opposes Unilateral Sanctions on Iran", *China Daily*, http://usa.chinadaily.com.cn/china/2012-01/05/content_14384508.htm, 5 January 2012

⁸⁰ Julie Jiang and Chen Ding, "Update on Overseas Investments by China's National Oil Companies", *International Energy Agency*, 2014, 28

⁸¹ Katzman, *Iran Sanctions*, 2015, 22

⁸² Forrokh Safavi, "Causes of Economic Stagnations From the Views of Iranian Bankers: Is the Global Sanction a Major Factor", *International Journal of Business and Economics Perspectives*, Vol 9(1), Fall 2014, 90

⁸³ Rick Gladstone, "Iran Admits Western Sanctions are Inflicting Damage", *New York Times*, 20 December 2011, A10

⁸⁴ Bush, EO 13224

⁸⁵ E. O. 13059, Prohibiting Certain Transactions With Respect to Iran, 21 August 1997, 44531

⁸⁶ Government Accountability Office, *Iran Sanctions: Impact in Furthering U.S. Objectives is Unclear and Should be Reviewed*, *GAO Highlights* (Washington, DC: GAO Press, December 2007), 2

⁸⁷ GAO, 2007, 29

⁸⁸ Ibid, 27

⁸⁹ United Nations Department of Economic and Social Affairs, *2013 international Trade Statistics Yearbook* (New York, NY: United Nations, 2014), 208

⁹⁰ World Integrated Trade Solution Database, <http://wits.worldbank.org/CountryProfile/Country/IRN/Year/1998>

⁹¹ <http://www.worldoils.com/oilprice.php>

⁹² Nima Gerami and Pierre Goldschmidt, *The International Atomic Energy Agency's Decision to Find Iran in Non-Compliance, 2002-2006*, Center for the Study of Weapons of Mass Destruction (Washington, DC: National Defense University Press, December 2012), 18-20

⁹³ Haleh Esfandiari, *Iran After the June 2005 Presidential Election*, Woodrow Wilson International Center For Scholars: Middle East Programs (Washington, DC: Woodrow Wilson International Center for Scholars, Summer 2005), 3

⁹⁴ United Nations Secretary General, "Resolution 1696 (2006)", *United Nations Security Council*, 2006, 2

⁹⁵ United Nations Secretary General, "Resolution 1737 (2006)", *United Nations Security Council*, 2006, 2

⁹⁶ United States Securities and Exchange Commission, *Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for Siemens Aktiengesellschaft* (Washington, DC: United States Government, 30 September 2006), 9

⁹⁷ *Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010*, S 124, 111th Congress, 1st Sess., *Public Law 111-195*, (July 2010): 1324

⁹⁸ Stephen Castle, "Europe Imposes New Sanctions on Iran", *The New York Times*, 26 July 2010

-
- ⁹⁹ United Nations Secretary General, “Security Council Imposes Additional Sanctions on Iran, Voting 12 in Favour to 2 Against, with 1 Abstention”, *United Nations Security Council*, 9 June 2010
- ¹⁰⁰ Dina Esfandiary, “Assessing the European Union’s Sanctions Policy: Iran as A Case Study”, *EU Non-Proliferation Consortium*, Non-Proliferation Papers No. 34, December 2013, 7
- ¹⁰¹ *Iran Threat Reduction And Syria Human Rights Act of 2012, Public Law 112-158*, 112th Congress, 1st Sess., (August 2012): Sec 202-212
- ¹⁰² Index Mundi, “West Texas Intermediate Daily Price”, <http://www.indexmundi.com/commodities/?commodity=crude-oil-west-texas-intermediate&months=120>
- ¹⁰³ Dominique Guillaume, Roman Zytek and Mohammad Reza Farzin, “Iran-The Chronicles of the Subsidy Reform”, *IMF Working Paper*, July 2011, 4
- ¹⁰⁴ *Ibid*, 4
- ¹⁰⁵ Lorenzo L Perez and Scott Brown, “Staff Report for 2006 Article IV Consultation”, *International Monetary Fund*, February 2007, 14
- ¹⁰⁶ Shayerah Ilias, *Iran’s Economic Conditions: U.S. Policy Issues* (Washington, DC: Congressional Research Service, June 2009), 6
- ¹⁰⁷ Emerging Markets Monitor, “Iran: Second Ahmadinejad Term Bad News For Inflation”, *Business Monitor International*, 29 June 2009, 19
- ¹⁰⁸ Ilias, “Iran’s Economic Conditions: U.S. Policy Issues”, 15 June 2009, 26
- ¹⁰⁹ Shayerah Ilias, *Iran’s Economic Conditions: U.S. Policy Issues* (Washington, DC: Congressional Research Service, April 2010), 18
- ¹¹⁰ Esfandiary, 2013, 7
- ¹¹¹ IMF Country Report No. 14/93, “Islamic Republic of Iran”, *International Monetary Fund*, 14 April 2014, 36
- ¹¹² *Ibid*, 36
- ¹¹³ U.S. Energy Information Administration, 2015, 7
- ¹¹⁴ Tohid Atashbar, “Iranian Disease: Why a Developing Country’s Government did not listen to Economists’ Advices”, *American Journal of Economics and Sociology*, Vol 72 (3) July 2013, 738
- ¹¹⁵ Esfandiary, 2013, 7
- ¹¹⁶ The World Bank, “GDP Growth Rate”, https://www.google.com.ph/publicdata/explore?ds=d5bncppjof8f9 &met_y=ny_gdp_mktp_kd_zg&idim=country:IRN:RUS:PAK&hl=en&dl=en#!ctype=l&strail=false&bcs=d&nselm=h&met_y=ny_gdp_mktp_kd_zg&scale_y=lin&ind_y=false&rdim=region&idim=country:IRN&ifdim=region&hl=en_US&dl=en&ind=false
- ¹¹⁷ Katzman, 2015, 49
- ¹¹⁸ Daniel Fineren, “Iran Nuclear Deal Shipping Insurance Element May Help Oil Sales”, *Reuters*, 24 November 2013
- ¹¹⁹ Katzman, 2015, 59
- ¹²⁰ *Ibid*, 59
- ¹²¹ *Ibid*, 63
- ¹²² *Ibid*, 63

-
- ¹²³ Mike Bird, "BAML: Iran's Economy Could Be Twice As Big Without the Ayatollah's Regime and Global Sanctions", *Business Insider*, 16 July 2015
- ¹²⁴ United States Government Accountability Office (GAO), *Iran: U.S. and International Sanctions Have Adversely Affect the Iranian Economy* (Washington, DC: GAO Highlights, February 2013), Foreword
- ¹²⁵ Meghan L. O'Sullivan, "Iran and the Great Sanctions Debate", *The Washington Quarterly*, 33 (4) October 2010: 12
- ¹²⁶ Jo Becker, Tyson Evans and Ron Nixon, "Companies With Permission to Bypass Sanctions", *New York Times*, 24 December 2010, <http://www.nytimes.com/interactive/2010/12/24/world/24-sanctions-list.html? r=0>
- ¹²⁷ Jo Becker, "U.S. Approved Business With Blacklisted Nations", *New York Times*, 23 December 2010, <http://www.nytimes.com/2010/12/24/world/24sanctions.html?hp>
- ¹²⁸ Paul Kerr, *Iran's Nuclear Program: Tehran's Compliance with International Obligations* (Washington, DC: Congressional Research Service, June 2015), 4
- ¹²⁹ IAEA Director General, *Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, February 2006), 10
- ¹³⁰ Kerr, *Iran's nuclear Program: Tehran's Compliance with International Obligations*, June 2015, 8
- ¹³¹ Thijs Van de Graaf, "The 'Oil Weapon' Reversed? Sanctions Against Iran and U.S.-EU Structural Power", *Middle East Policy*, 20(3) (Fall 2013): 148
- ¹³² Mansour Kashfi, "Iranian Oil Industry under Siege As International Sanctions Grow," *Oil & Gas Journal*, March 4, 2013
- ¹³³ Nikolay A. Kozhanov, "U.S. Economic Sanctions against Iran: Undermined by External Factors," *Middle East Policy* 18, no.3. (2011): 144-160
- ¹³⁴ Jonathan Masters, "CFR Backgrounders: What are Economic Sanctions", *Council on Foreign Relations*, <http://www.cfr.org/sanctions/economic-sanctions/p36259>, 8 April 2015
- ¹³⁵ *Code of Federal Regulations*, Special Measures Under Section 311 of the USA Patriot Act and Law Enforcement Access to Foreign Bank Records, title 31, sec. 1010.640, 2011
- ¹³⁶ Ella Shagabutdinova and Jeffrey Berejikian. "Deploying Sanctions while Protecting Human Rights: Are Humanitarian 'Smart' Sanctions Effective?", *Journal of Human Rights*, 6:59-74 (2007): 59
- ¹³⁷ Anthony H. Cordesman, "Iran: Sanctions, Energy, Arms Control and Regime Change", 14 February 2014, 66-67

BIBLIOGRAPHY

- Arms Control Association. *Section 3: Understanding the JCPOA*, armscontrol.org, <http://www.armscontrol.org/reports/Solving-the-Iranian-Nuclear-Puzzle-The-Joint-Comprehensive-Plan-of-Action/2015/08/Section-3-Understanding-the-JCPOA>, 10 August 2015.
- Atashbar, Tohid. "Iranian Disease: Why a Developing Country's Government did not listen to Economists' Advices", *American Journal of Economics and Sociology*, Vol 72 (3) July 2013.
- Becker, Jo. "U.S. Approved Business With Blacklisted Nations", *New York Times*, 23 December 2010.
- Becker, Jo, Tyson Evans and Ron Nixon. "Companies With Permission to Bypass Sanctions", *New York Times*, 24 December 2010.
- Bolan, Christopher. "The Iranian Nuclear Debate: More Myths Than Facts", *The Parameters* 43(2) (Summer 2013).
- Brown, Gary. "Why Iran Didn't Admit Stuxnet Was an Attack", *JFQ: Joint Force Quarterly*, no. 63 (4th Quarter, 2011).
- Business Section. "Iran's Rial Hits an All-Time-Low against the US Dollar", *British Broadcasting Company News*, 1 October 2012.
- Cain, Anthony C. *Iran's Strategic Culture and Weapons of Mass Destruction: Implications for US Policy*, (Maxwell, AL: Air War College, 2002).
- Castle, Stephen. "Europe Imposes New Sanctions on Iran", *The New York Times*, 26 July 2010.

Cherry, Steven. Interview by Ralph Langer, *How Stuxnet is Rewriting the Cyberterrorism Playbook*, 13 October 2010.

Clawson, Patrick. "U.S. Sanctions", *United States Institute of Peace*,
<http://iranprimer.usip.org/resource/us-sanctions>

Code of Federal Regulations, Special Measures Under Section 311 of the USA Patriot Act and Law Enforcement Access to Foreign Bank Records, title 31, sec. 1010.640, 2011

Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010, HR 2194, 111th Cong., 2nd Sess., Public Law No: 111-195, (1 July 2010): 124 STAT. 1318.

Council of the European Union. *Council Regulation (EU) 691/2010 of 25 October 2010 on restrictive measures against Iran and repealing Regulation (EC) No 423/2007*, Official Journal of the European Union, 25 October 2010.

Council of the European Union. *Council Regulation (EU) No 267/2012 of 23 March 2012 concerning restrictive measures against Iran and repealing Regulation (EU) No 961/2010*, Official Journal of the European Union, 23 March 2012.

Cordesman, Anthony H., "Iran: Sanctions, Energy, Arms Control and Regime Change", 14 February 2014

Cordesman, Anthony, Robert M Shelala, Omar Mohamed. *The Gulf Military Balance: The Gulf and the Arabian Peninsula*, (Washington, DC: Rowan & Littlefield, 2014).

Emerging Markets Monitor. "Iran: Second Ahmadinejad Term Bad News For Inflation", *Business Monitor International*, 29 June 2009.

E. O. 13059. Prohibiting Certain Transactions With Respect to Iran, 21 August 1997

EO 13224. Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism, 23 September 2001.

EO 13645. Authorizing the Implementation of Certain Sanctions Set Forth in the Iran Freedom and Counter-Proliferation Act of 2012 and Additional Sanctions with Respect to Iran, 3 June 2013.

Erlanger, Steven. "As negotiators Ease Demands on Iran, More Nuclear Talks Are Set", *New York Times*, 27 February 2013.

Erlanger, Steven and Rick Gladstone, "Iran Nuclear Talks End with No Deal", *New York Times*, 24 May 2012.

-
- Esfandiary, Dina. "Assessing the European Union's Sanctions Policy: Iran as A Case Study", *EU Non-Proliferation Consortium*, Non-Proliferation Papers No. 34, December 2013.
- Esfandiari, Haleh. *Iran After the June 2005 Presidential Election*, Woodrow Wilson International Center For Scholars: Middle East Programs (Washington, DC: Woodrow Wilson International Center for Scholars, Summer 2005).
- European Union. "Legislation", *Official Journal of the European Union*, Vol 55 (January 2012).
- European Union External Action Service. *Joint Statement by EU High Representative Catherine Ashton and Foreign Minister of the Islamic Republic of Iran Mohammad Javad Zarif* (Vienna, Austria: European Union Printing Service, 16 October 2013).
- European Union Web site. "The European Union and Iran", http://eeas.europa.eu/top_stories/2012/130412_iran_en.htm
- Fineren, Daniel, "Iran Nuclear Deal Shipping Insurance Element May Help Oil Sales", *Reuters*, 24 November 2013.
- Gerami, Nima and Pierre Goldschmidt. *The International Atomic Energy Agency's Decision to Find Iran in Non-Compliance, 2002-2006*, Center for the Study of Weapons of Mass Destruction (Washington, DC: National Defense University Press, December 2012).
- George W. Bush. "2002 State of the Union Address" (address, United States Congress, Washington DC, January 2002).
- Gladstone, Rick. "Iran Admits Western Sanctions are Inflicting Damage", *New York Times*, 20 December 2011.
- Gladstone, Rick. "Iranian Oil Minister Concedes Sanctions Have Hurt Exports", *New York Times*, 7 Jan 2013.
- Government Accountability Office. *Iran Sanctions: Impact in Furthering U.S. Objectives is Unclear and Should be Reviewed*, *GAO Highlights* (Washington, DC: GAO Press, December 2007).
- Guillaume, Dominique, Roman Zytek and Mohammad Reza Farzin. "Iran-The Chronicles of the Subsidy Reform", *IMF Working Paper*, July 2011.

Heuty, Antoine. "Iran's oil and Gas Management", *Revenue Watch Institute*, February 2012.

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 24 September 2005).

IAEA Director General, *Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, February 2006)

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, May 2011).

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, May 2012).

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran*, (Vienna, Austria: IAEA Board of Governors, 22 May 2012).

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 28 August 2013).

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 14 November 2013).

IAEA Director General. *Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran* (Vienna, Austria: IAEA Board of Governors, 23 May 2014).

Ilias, Shayerah. *Iran's Economic Conditions: U.S. Policy Issues* (Washington, DC: Congressional Research Service, June 2009).

Ilias, Shayerah. *Iran's Economic Conditions: U.S. Policy Issues* (Washington, DC: Congressional Research Service, April 2010)

IMF Country Report No. 14/93. "Islamic Republic of Iran", *International Monetary Fund*, 14 April 2014.

Index Mundi Website. "West Texas Intermediate Daily Price".

<http://www.indexmundi.com/commodities/?commodity=crude-oil-west-texas-intermediate&months=120>

Iran Sanctions Loophole Elimination Act of 2013. S 892, 113th Congress 1st Sess., (8 May 2013).

Iran Threat Reduction And Syria Human Rights Act of 2012. Public Law 112-158, 112th Congress, 1st Sess., (August 2012).

Jiang, Julie and Chen Ding. "Update on Overseas Investments by China's National Oil Companies", *International Energy Agency*, 2014.

Kashfi, Mansour, "Iranian Oil Industry under Siege As International Sanctions Grow," *Oil & Gas Journal*, March 4, 2013

Kenneth Katzman. *Iran: Current Developments and U.S. Policy* (Washington, DC: Congressional Research Service, April, 2003).

Katzman, Kenneth. *Iran: U.S. Concerns and Policy Responses*, (Washington, DC: Congressional Research Service, March 2009)

Kenneth Katzman. *Achievements of and Outlook for Sanctions on Iran* (Washington, DC: Congressional Research Service, April 2014).

Katzman, Kenneth. *Iran Sanctions* (Washington, DC: Congressional Research Service, August 2015).

Kerr, Paul. *Iran's Nuclear Program: Status* (Washington DC: Congressional Research Service, October 2012).

Kerr, Paul. *Iran's Nuclear Program: Tehran's Compliance with International Obligations* (Washington, DC: Congressional Research Service, June 2015).

Kozhanov, Nikolay A., "U.S. Economic Sanctions against Iran: Undermined by External Factors," *Middle East Policy* 18, no.3. (2011)

Lander, Mark and Nazila Fathi, "U.S. to Joint Iran Talks Over Nuclear Program", *New York Times*, 8 April 2009.

Macfarquhar, Neil. "U.N. Approves New Sanctions to Deter Iran", *New York Times*, 9 June 2010.

Markoff, John and David Sanger. "In a Computer Worm, a Possible Biblical Clue", *New York Times*, 29 Sept 2010.

Masters, Jonathan, "CFR Backgrounders: What are Economic Sanctions", *Council on Foreign Relations*, <http://www.cfr.org/sanctions/economic-sanctions/p36259>, 8 April 2015

Mike Bird, "BAML: Iran's Economy Could Be Twice As Big Without the Ayatollah's Regime and Global Sanctions", *Business Insider*, 16 July 2015.

Monshipouri, Mahmood and Manochehr Dorraj. "Iran's Foreign Policy: A Shifting Strategic Landscape", *Middle East Policy*, 20(4) (Winter 2013).

National Defense Authorization Act for Fiscal Year 2013 – Subtitle D, HR 4310, 112th Congress, 2nd Sess., Public Law 112-239 (11 May 2012).

O'Sullivan, Meghan L. "Iran and the Great Sanctions Debate", *The Washington Quarterly*, Vol 33 (4) October 2010.

P5+1 and Iran. *Joint Plan of Action* (Vienna, Austria: European External Action Service, 24 November 2013).

P5+1. *Joint Comprehensive Plan of Action* (Vienna, Austria: European External Action Service, 14 July 2015).

Perez, Lorenzo L and Scott Brown. "Staff Report for 2006 Article IV Consultation", *International Monetary Fund*, February 2007.

Rouhani, Hassan. "Time to Engage", *Washington Post*, 19 September 2013

Rouhani, Hassan. "Statement by H. E. Hassan Rouhani President of the Islamic Republic of Iran at the Sixty-Eight Session of the United Nations General Assembly" (Address, United Nations General Assembly, New York, NY, 24 September 2013)

Safavi, Forrokh. "Causes of Economic Stagnations From the Views of Iranian Bankers: Is the Global Sanction a Major Factor", *International Journal of Business and Economics Perspectives*, Vol 9(1), Fall 2014.

Sanger, David. "Obama Order Sped Up Wave of Cyberattacks Against Iran", *New York Times*, June 2012.

Sanger, David. *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power* (New York, NY: Random House Incorporated, April 2013).

-
- Sanger, David. "Negotiators Agree to Extend Iran Nuclear Talks Four More Months, Diplomats Say", *New York Times*, 18 July 2014.
- Shagabutdinova, Ella and Jeffrey Berejikian. "Deploying Sanctions while Protecting Human Rights: Are Humanitarian 'Smart' Sanctions Effective?", *Journal of Human Rights*, 6:59-74 (2007)
- Torbati, Yeganeh. "Iranian Rial Hits Record Low Despite New Effort to Stabilise It", *Reuters*, 25 September 2012.
- Trading Economics Web Site. "Iran GDP Annual Growth Rate", *tradingeconomics.com*, <http://www.tradingeconomics.com/iran/gdp-growth-annual>
- Trading Economics Web Site. "Iran Inflation Rate", *tradingeconomics.com*, <http://www.tradingeconomics.com/iran/inflation-cpi>
- United Nations Department of Economic and Social Affairs. *2013 international Trade Statistics Yearbook* (New York, NY: United Nations, 2014).
- United Nations Security Council. *Resolution 1696* (New York, NY: United Nations Secretary General, 2006).
- United Nations Security Council. *Resolution 1737* (New York, NY: United Nations Secretary General, December 2006).
- United Nations Security Council. *Resolution 1747* (New York, NY: United Nations Secretary General, March 2007).
- United Nations Security Council. *Resolution 1803* (New York, NY: United Nations Secretary General, March 2008).
- United Nations Security Council. *Resolution 1929* (New York, NY: United Nations Secretary General, 2010).
- United Nations Security Council. *The Implementation of the Joint Plan of Action (JPOA)*, (Vienna, Austria: United Nations Director General, November 2013).
- United Nations Secretary General. "Security Council Imposes Additional Sanctions on Iran, Voting 12 in Favour to 2 Against, with 1 Abstention", *United Nations Security Council*, 9 June 2010.
- United States Department of State. *Patterns of Global Terrorism 2002*, Department of State Press (Washington DC: April, 2013).

United States Department of State. *Overview of U.S. Sanctions on Iran Pertaining to Activities and Transactions by non-U.S. Individuals and Entities* (Washington, DC: State Department Press, 28 March 2014).

United States Department of State Web site. "Iran Sanctions", <http://www.state.gov/e/eb/tfs/spi/iran/index.htm>

United States Energy Information Administration Web Site. "International Energy Statistics", <http://www.eia.gov/beta/international/>

United States Energy Information Administration. "Iran's oil Exports Not Expected to Increase Significantly Despite Recent Negotiations", *U.S. Energy Information Administration*, 10 December 2013

United States Government Accountability Office (GAO), *Iran: U.S. and International Sanctions Have Adversely Affected the Iranian Economy* (Washington, DC: GAO Highlights, February 2013).

United States Securities and Exchange Commission. *Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for Siemens Aktiengesellschaft* (Washington, DC: United States Government, 30 September 2006).

Van de Graaf, Thijs, "The 'Oil Weapon' Reversed? Sanctions Against Iran and U.S.-EU Structural Power", *Middle East Policy*, 20(3) (Fall 2013).

World Bank Web Site. "GDP Growth Rate". https://www.google.com.ph/publicdata/explore?ds=d5bncppjof8f9_&met_y=ny_gdp_mktp_kd_zg&idim=country:IRN:RUS:PAK&hl=en&dl=en#!ctype=l&strail=false&bcs=d&nselm=h&met_y=ny_gdp_mktp_kd_zg&scale_y=lin&ind_y=false&rdim=region&idim=country:IRN&ifdim=region&hl=en_US&dl=en&ind=false

World Oils Web Site. "Oil Prices". <http://www.worldoils.com/oilprice.php>

Yan, Wang. "China Opposes Unilateral Sanctions on Iran", *China Daily*, http://usa.chinadaily.com.cn/china/2012-01/05/content_14384508.htm, 5 January 2012.